

The opinion in support of the decision being entered today was *not* written for publication in a law journal and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* YUNG-SEOP LEE

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Appeal 2007-0367  
Application 09/782,149  
Technology Center 3600

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Decided: March 28, 2007

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Before TERRY J. OWENS, HUBERT C. LORIN, and ANITA PELLMAN  
GROSS, *Administrative Patent Judges*.

GROSS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Lee (Appellant) appeals under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1 through 13, which are all of the claims pending in this application.

Appellant's invention relates to a method and system for evaluating and ranking a number of records. Claim 1 is illustrative of the claimed invention and reads as follows:

1. A computer implemented method of evaluating a plurality of records, each record having at least a first attribute and a second attribute, each of the first attribute and the second attribute having an associated attribute value, the method comprising:
    - a) first assigning a discretized attribute score for each of the attribute values;
    - b) first sorting the plurality of records in to an order based on the assigned discretized attribute scores associated with the first attribute;
    - c) second sorting the plurality of records in to an order based on the assigned discretized attribute scores associated with the second attribute;
    - d) third sorting the plurality of records in to an order based on the attribute values associated with at least the first attribute and the second attribute, until records, which have different attribute values associated with at least the first attribute or the second attribute, have been sorted to different ranks; and
    - e) second assigning an evaluation score to each record which has been sorted.

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

Powers US 6,604,084 B1 Aug. 05, 2003  
(filed July 01, 1998)

Arthur Middleton Hughes, "Quick Profits with RFM Analysis," archived February 8, 1999 at [www.dbmarketing.com/articles/rfmtools.html](http://www.dbmarketing.com/articles/rfmtools.html). (Hughes)

"RFM for Windows," Database Marketing Institute, archived February 3, 1999 at [www.dbmarketing.com/ams.html](http://www.dbmarketing.com/ams.html). (RFM for Windows)

Claims 1 through 3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hughes.

Claims 4 and 7 through 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hughes.

Claims 5 and 6 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hughes in view of Powers.

Claims 11 through 13 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hughes in view of RFM for Windows.

We refer to the Examiner's Answer (mailed March 21, 2006) and to Appellant's Brief (filed February 13, 2006) for the respective arguments.

#### SUMMARY OF DECISION

As a consequence of our review, we will reverse the anticipation rejection of claims 1 through 3 and the obviousness rejections of claims 4 through 13. We also enter a new ground of rejection for claims 1 through 13 under 35 U.S.C. § 101.

#### OPINION

Appellant contends (Br. 5-6) that independent claim 1 requires a third sorting based on the attribute value associated with at least one of the first and second attributes, whereas Hughes' third sorting is based on a third discretized attribute score. We agree. Hughes assigns a code from 1 to 5 for each of three attributes—recency, frequency, and monetary measures—and sorts based on each score. Thus, the third sort is based on a third attribute

score, not on an attribute value associated with one of the first and second attributes. Since Hughes fails to disclose each and every limitation of the claims, Hughes cannot anticipate claims 1 through 3. Accordingly, we will not sustain the anticipation rejection of claims 1 through 3.

Regarding the obviousness rejection of claims 4 and 7 through 10 over Hughes, Appellant again contends (Br. 7) that Hughes fails to disclose the claimed third sorting. The Examiner provides no convincing line of reasoning why it would have been obvious to modify Hughes to sort a third time based on an attribute value associated with at least one of the first and second attributes. Accordingly, we cannot sustain the obviousness rejection of claims 4 and 7 through 10.

Appellant did not argue the combination of Hughes with Powers to reject claims 5 and 6. However, since the claims depend from claim 1, and Powers fails to cure the deficiency of Hughes noted *supra*, we cannot sustain the obviousness rejection of claims 5 and 6.

Appellant contends (Br. 8) that RFM for Windows teaches the invention of Hughes in a Windows environment. As such, neither teaches the claimed third sorting. We agree. Accordingly, we cannot sustain the obviousness rejection of claims 11 through 13 over Hughes in view of RFM for Windows.

Under the provisions of 37 C.F.R. § 41.50(b), we enter the following new ground of rejection against Appellant's claims 1 through 13 under 35 U.S.C. § 101 as being nonstatutory.

According to the Interim Guidelines for Examination of patent Applications for patent Subject Matter Eligibility (1300 *Off. Gaz. Pat. Office* 142 (Nov. 22, 2005)), the first step in determining whether claims are

statutory under 35 U.S.C. § 101 is to determine whether the claims as a whole are directed to nothing more than abstract ideas, natural phenomena, or laws of nature. Clearly, the present claims recite neither a natural phenomenon nor a law of nature, so the issue is whether they are directed to an abstract idea. We note that mathematical algorithms are considered to be abstract ideas. Thus, processes that are merely mathematical algorithms are nonstatutory under 35 U.S.C. § 101. We further note that it is generally difficult to ascertain whether a process is merely an abstract idea, particularly since claims are often drafted to include minor physical limitations such as data gathering steps or post-solution activity. However, if the claims are considered to be an abstract idea, then the claims are not eligible for and, therefore, are excluded from patent protection.

Present claims 1 through 9 recite a machine-implemented method. However, as noted *supra*, the question is whether the claims *as a whole* are nothing more than abstract ideas. As a whole, the claims recite a series of mathematical steps. In particular, independent claim 1 recites assigning two scores, or numbers, ordering based on the first number, ordering based on the second number, ordering based on a third value, or number, and assigning a final score, or number. We find nothing in claim 1, or any of its dependents, other than mathematical steps. Claim 10 recites the same steps as claim 1, but relates the steps to the airline industry. Specifically, the method is for evaluating customers in the airline industry, the first attribute is net revenue, and the second attribute is number of flights. However, the process itself is still a series of mathematical steps. Thus, claims 1 through 10 merely recite mathematical algorithms.

Nonetheless, assuming *arguendo* that the claims are not solely directed to an algorithm, then the next step set forth in the guidelines is to determine whether the claimed invention is directed to a practical application of an abstract idea, law of nature, or natural phenomenon. Again the claims involve neither a law of nature nor natural phenomenon, so the issue is whether they are directed to a practical application of an abstract idea. The guidelines indicate that either a transformation of physical subject matter to a different state or thing or the production of a useful, concrete, and tangible result equates to a practical application of an abstract idea, in accordance with the test set forth in *State Street Bank & Trust Co. v. Signature Finance Group, Inc.*, 149 F.3d 1368, 1373; 47 USPQ2d 1596, 1601 (Fed. Cir. 1998). If the claims are not directed to a practical application of an abstract idea (or they do not transform physical subject matter to a different state or thing nor produce a useful, concrete, tangible result), then the claims are nonstatutory under 35 U.S.C. § 101.

In claims 1 through 9, we find no physical subject matter being transformed, just numbers being manipulated. Further, we find no recitation of a useful, concrete, tangible result, just a final score or number. Accordingly, claims 1 through 9 are not directed to a practical application of an abstract idea. They are merely directed to abstract ideas that are nonstatutory under 35 U.S.C. § 101. Additionally, although the preamble of claim 10 ties the method to the airline industry, the data being manipulated are arbitrary numbers that do not represent physical subject matter, and the result is still just a number. Therefore, as we find no physical subject matter being transformed and no useful, concrete, tangible result, claim 10 is an abstract idea that is nonstatutory under 35 U.S.C. § 101.

A programmed general purpose machine which merely performs a mathematical algorithm has been held nonstatutory as an attempt to patent the algorithm itself, *see Gottschalk v. Benson*, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972) and *In re de Castelet*, 562 F.2d 1236, 1243, 195 USPQ 439, 445 (CCPA 1977). We believe that a similar case exists for "manufactures" which store programs that cause a machine to perform a mathematical algorithm stored on a tangible medium.

Claims 11 through 13 are directed to a general purpose machine which merely performs the mathematical algorithm recited in claim 1 and an article which stores a program that causes the machine to perform the mathematical algorithm of claim 1. Thus, we find claims 11 through 13 to be nonstatutory as further attempts to patent the algorithm.

#### ORDER

The decision of the Examiner rejecting claims 1 through 3 under 35 U.S.C. § 102(b) and claims 4 through 13 under 35 U.S.C. § 103 is reversed. Claims 1 through 13 are also newly rejected under 35 U.S.C. § 101.

This decision contains a new ground of rejection pursuant to 37 CFR § 41.50(b) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)). 37 CFR § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 CFR § 41.50(b) also provides that Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the Examiner, in which event the proceeding will be remanded to the Examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a). *See* 37 CFR § 1.136(a)(1)(iv).

REVERSED  
37 C.F.R. § 41.50(b)

jlb

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